

CLAIMS

What is claimed is:

- 5 1. Procedure to increase the manipulation security for a bi-directional contactless data transmission by means of a first transmission and receiver unit (BA) and a second transmission and receiver unit (TR)
 - **wherein**
 - the second transmission and receiver unit (TR), on receipt of a transmitted electromagnetic signal ($f'ULmod$) from the first transmission and receiver unit (BA), will convert this signal relative to at least one selected physical quantity into a response signal ($f'DLmod$) and re-transmit the same to the first transmission and receiver unit (BA), and
 - on receipt of the response signal ($f'DLmod$), the first transmission and receiver unit (BA) will convert this response signal with regard to the selected physical quantity into a test signal ($f'UL$) such that this will compensate the conversion effected in the second transmission and receiver unit (TR), and
 - finally, in the first transmission and receiver unit (BA) a comparison between the test signal ($f'UL$) and the transmitted electromagnetic signal ($f'UL$) is effected, and
 - as a result (CF) of this comparison a value is assigned to a manipulation indication.
- 20 2. Procedure according to Claim 1 **wherein** it is investigated for the comparison within a time period t , whether there is a fixed relationship with regard to the selected physical quantity.
- 25 3. Procedure according to Claim 1 **wherein**, if the result (CF) of the comparison is below a selected limit value, the manipulation indication is assigned the value 0.

4. Procedure according to Claim 1 **wherein** this comparison (SP) will preferably be completed within a period t_1 of 300ms max. following the transmission of the original electromagnetic signal (f_{UL}mod).

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5. Procedure according to Claim 1 **wherein** as a physical quantity for the comparison (SP) the phase, amplitude, or frequency of the test signal is used.

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6. Procedure according to Claim 1 wherein data information is modulated onto the electromagnetic signal (f_{UL}, f_{DL}) by means of frequency or amplitude modulation.

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7. Procedure according to Claim 1 wherein the comparison (SP) is effected only by means of the frequency of the electromagnetic signal (f'_{UL}, f_{UL}).

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8. Procedure according to Claim 1 wherein, in the second transmission and receiver unit (TR), the frequency of the received electromagnetic signal (f_{UL}) is multiplied with a number (Z), and, in the first transmission and receiver unit (BA), the frequency of the received electromagnetic signal (f'_{DL}) is divided by this number (Z).

9. Procedure according to Claim 8 wherein the multiplication and division is effected by means of a ratio made up of two natural numbers.

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10. Procedure according to Claim 7 ~~and Claim 8~~ wherein, if the result (CF) of the frequency comparison is below a selected limit value, the manipulation indication is assigned the value 0.

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